

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listing of claims in the application.

#### **Listing of Claims:**

- 1-3.    *(Canceled)*
4.       *(Previously Presented)* The method of claim 30, wherein said extruder is a twin screw extruder.
5.       *(Previously Presented)* The method of claim 30, wherein the temperature of the polymer in the extrusion die is achieved by heating the extrusion die externally.
6.       *(Previously Presented)*       The method of claim 30, wherein the temperature of the polymer in the extrusion die is achieved by the induction of heat from the interior of the extrusion die.
7.       *(Canceled)*
8.       *(Previously Presented)*       The method of claim 30, wherein the temperature (°C) of the polymer in the extrusion die is not higher than 60% above the crosslinking temperature (°C) of the polymer.
9.       *(Previously Presented)*       The method of claim 30, wherein the temperature (°C) of the polymer before entering the extrusion die is not higher than 30% above the crystallite melting point (°C) of the polymer.
10.      *(Previously Presented)*       The method of claim 30, wherein the crosslinking temperature (°C) of the polymer is approximately 30% above the crystallite melting point (°C) of the polymer.

11. ***(Previously Presented)*** The method of claim 30, wherein the crystallite melting point of the polymer is approximately 125-140° C.

12. ***(Previously Presented)*** The method of claim 30, wherein the crosslinking temperature of the polymer is approximately 165-185° C.

13. ***(Canceled)***

14. ***(Canceled)***

15. ***(Previously Presented)*** The method of claim 30, wherein the tube is maintained at a temperature above the crosslinking temperature after discharge from the extrusion die.

16. ***(Previously Presented)*** The method of claim 30, wherein the tube is cooled after crosslinking.

17-29. ***(Canceled)***

30. ***(Currently Amended)*** A method for extruding a peroxide crosslinked polymer tube, comprising:

supplying a mixture to a screw ~~[[an]]~~ extruder, the mixture comprising: a crosslinkable polymer, a crosslinking agent, and a stabilizing agent, wherein the polymer has a crystallite melting point and a crosslinking temperature;

heating the mixture in the screw extruder with an external heating unit to a temperature above the crystallite melting point but below the crosslinking temperature;

controlling the temperature of the mixture in the screw extruder with the external heating unit and an internal cooling unit;

continuously feeding the mixture from the screw extruder to an extrusion die, wherein a melting pressure before entry to the extrusion die is approximately 700-1500 bar;

heating the mixture in the extrusion die above the crosslinking temperature to effect at least a partial crosslinking of the polymer in the extrusion die, wherein the temperature (°C) of the mixture in the extrusion die is at least 15% above the crosslinking temperature (°C); and

discharging the mixture from the extrusion die, wherein the degree of crosslinking of the polymer on discharge from the extrusion die is above 60%.

31.     *(Previously Presented)*         The method of claim 30, wherein the crosslinking agent comprises organic peroxide.

32.     *(Previously Presented)*         The method of claim 30, wherein the melting pressure before entry to the extrusion die is approximately 1200 bar.